

**REMARKS**

This amendment is in response to a second, non-final Office action (Paper No. 5) dated 10 April 2003. Upon entry of this amendment, claims 1-47 will be pending in this application. Applicant has amended claims 8-11, 13, 17, 18, 21-26, 32, 34 and 39 by this amendment and has newly added claims 42-47 by this amendment.

In Paper No. 5, the Examiner objected to the drawings for not illustrating a graphical user interface. Applicant has amended FIG. 1 by this amendment to overcome this objection. Applicant has added the words "with GUI" next to the PC in FIG. 1 by this amendment. Applicant further submits that ordinarily, personal computers have graphical user interfaces and therefore does not understand the necessity of amending FIG. 1 further to have labels of parts of a personal computer that are ordinarily assumed and well known.

In Paper No. 5, the Examiner objected to claim 39. Applicant has amended claim 39 by this amendment to overcome this objection and to correct for the typographical error.

In Paper No. 5, the Examiner has rejected claims 32 and 34 under 35 U.S.C. 112, second paragraph. Applicant has amended claims 32 and 34 to overcome this rejection and fix the errors. Applicant is appreciative of the Examiner bringing these errors to Applicant's attention.

In Paper No, 5, the Examiner has rejected claims 1, 5, 7, 8, 10, 11, 13, 15, 16, 21 and 23

under 35 U.S.C. 103 (a) as being unpatentable over Kunishi *et al.*, U.S. Patent No. 5,991,557 in view of Jeong *et al.*, U.S. Patent No. 6,246,847 and further in view of newly cited Hashimoto *et al.*, U.S. Patent No. 6,088,548. The Examiner has also rejected claims 1, 5, 7, 8, 10, 11, 13, 15, 16, 21 and 23 under 35 U.S.C. 103 (a) as being unpatentable over Kunishi '557 in view of newly cited Nishiuwtoko *et al.*, U.S. Patent No. 6,079,029 and further in view of newly cited Hashimoto '548. In Paper No. 5, the Examiner has rejected claims 3 and 18 under 35 U.S.C. 103 (a) as being unpatentable over Kunishi '557 in view of Jeong '847 and Hashimoto '548 and further in view of Kajiwara *et al.*, U.S. Patent No. 6,339,476. The Examiner has also rejected claims 3 and 18 under 35 U.S.C. 103 (a) as being unpatentable over Kunishi '557 in view of Nishiuwatoko '029 and Hashimoto '548 and further in view of Kajiwara '476. Applicant has the following comments regarding these prior art rejections.

### **Summary of Applicant's Invention**

Applicant seeks to improve image quality in an electrophotographic device. Applicant has two embodiments. In one embodiment, a user inputs a resolution for printing a print job. Then, the charge roller is charged to a certain DC voltage magnitude that is dependent upon on the resolution selected by the user. In the other embodiment, the user selects a print mode, either text or graphics. Then, the charge roller is charged to a certain DC voltage magnitude that is dependent on whether graphics mode or text mode is selected. Another feature of Applicant's invention is a laser scanning unit that forms the latent image on the photoconductive drum. The power output by the laser scanning unit is dependent upon the selected print mode or the selected

resolution.

#### **Discussion of Kunishi '557**

Kunishi '557 selectively applies an AC voltage to the charge roller, where the frequency and not the magnitude of the AC voltage varies depending on whether character or photographic mode is selected. Kunishi '557 changes the frequency, not the magnitude of voltage applied to the charge roller. Kunishi '557 pertains to an AC voltage, not a DC voltage applied to the charge roller. Kunishi '557 varies the frequency of the AC voltage based on whether photographic mode or character mode is selected, not on the resolution selected and not on the dpi of resolution selected.

#### **Discussion of Jeong '847**

Jeong '847 pertains to varying the voltage applied to the transfer roller 180 according to the electrical resistance of the print medium. Jeong '847 does not pertain to changing the voltage to the charge roller 130, which is an entirely different roller in Jeong '847. In Jeong '847, the charge roller 130 is always charged to -1.4 kV. Jeong '847 does this to reduce the waste toner left over on the rollers after printing.

#### **Discussion of Nishiuwatoko '029**

In Paper No. 5, the Examiner relies on only column 20, lines 28-57 of Nishiuwatoko '029. This passage teaches high voltage power supply source 33c, as illustrated in FIG. 23,

applying power to various elements in an electrophotographic apparatus. This passage in Nishiuwatoko '029 indicates that this power source 33c is turned off when either the process cartridge B is not present or when the cover is not closed. This passage of Nishiuwatoko '029 does not teach varying the voltage to any element in the electrophotographic apparatus except for this disconnection of power if cartridge B is not present or the cover is open.

#### **Discussion of Hashimoto '548**

Hashimoto '548 teaches that an AC voltage superimposed on a DC voltage is applied to sleeve 13 of charger 2. The AC component is reduced and eliminated after a jam and after an image formation operation. The elimination of the AC component to sleeve 13 is for better toner ejection after image formation and to reduce fog. The DC component is never adjusted. Also, the elimination of the AC component is not in response to a selected print mode or a selected resolution for a print job. The elimination of the AC component is not carried out to improve an image quality but, instead is carried out to aid in the clean up of toner after an image formation.

#### **Discussion of Kajiwara '476**

Kajiwara '476 pertains to the scanning an image and not to the printing of an image.

#### **Discussion of Claims 1 and 16**

In claim 1, Applicant claims, "selecting a resolution for electrophotographic printing" and "charging the organic photoconductor by selectively applying to the charge roller a charge

voltage corresponding to the resolution selected for the electrophotographic printing”. In Paper No. 5, the Examiner never addresses these features, *i.e.*, (1) the selection of resolution for printing and (2) applying a voltage to the charge roller **corresponding to the selected resolution**. These features are never discussed in Paper No. 5 making Paper No. 5 an incomplete Office action.

In claim 16, Applicant claims “means for selecting a resolution for electrophotographic printing” and “means for ... selectively apply charge to charge roller, the charge voltage corresponding to the resolution selected”. In Paper No. 5, the Examiner never discusses (1) the means for selecting resolution” nor (2) means for selectively applying a charge to the charge roller where the charge voltage corresponds to the resolution selected. Again, because these features were never addressed in Paper No. 5, Applicant submits that Paper No. 5 is an incomplete Office action.

Instead, in Paper No. 5, the Examiner lumps the rejection of claims 1 and 16 claiming one embodiment with the rejection of claims 8 and 21 claiming a different embodiment. Then the Examiner discusses the Kunishi ‘557 reference where it is the print mode, not the resolution that is selected. Kunishi ‘557 discusses applying a different AC frequency based on whether a character mode or a photograph mode is selected, but Kunishi ‘557 is silent about changes in voltages applied based on resolution selected. Since the other applied prior art references do not discuss this selection of a print resolution and charging the charge roller with a voltage that

depends on a resolution selected, Applicant submits that claims 1 and 16 are not taught or suggested by the applied prior art.

Furthermore, Applicant points out that “resolution” is different than “print mode”. Applicant’s specification and depending claims 3 and 18 clearly define the selection of resolution as selecting either 600 dpi or 1200 dpi resolution. This is not the same as selecting character mode or photographic mode. Therefore, the applied prior art does not teach or suggest the limitations of Applicant’s claims 1 and 16.

#### **The Examiner’s use of the Hashimoto ‘548 reference**

In Paper No. 5, the Examiner states, “Hashimoto et al discloses using a transfer charger 3 being a corona charger. The transfer roller may be replaced with a charging roller. Note column 5, lines 9-20.” Applicant disagrees. Applicant submits that col 5, lines 15-20 of Hashimoto ‘548 state that, “the transfer charger shown in FIG. 4 may be replaced with a **combination** of a charging roller or a transfer belt **and** an electroconductive brush, an electroconductive blade, an electroconductive roller press-contacted to a back side thereof”. This passage in Hashimoto ‘548 does not imply that the transfer roller can be substituted for a charger roller or vice versa. It states that the transfer charger can be a combination of two parts. One of the two parts can be a charger roller. The other is an electroconductive blade, brush or roller, as is evidenced by FIG. 4 of Hashimoto ‘548. If  $A = B + C$ , this does not imply that  $A = B$ . Therefore, the Examiner’s conclusion that a charge roller can be substituted for a transfer roller and vice versa is false.

**Kunishi '557 is not combinable with the other four applied prior art references**

Kunishi '557 seeks to improve image quality. Jeong '847 seeks to reduce waste toner left on the various rollers after a print job. Nishiuwatoko '029 seeks to cut off power to the rollers when the machine is not ready for printing or when the cover is opened. Hashimoto '548 pertains to better toner ejection after printing by eliminating a problem called "fog". Kajiware '476 pertains to the optics of image scanning, not printing. Applicant submits that the purpose of each of these references are too unrelated to combine. Only Kunishi '557 seeks to improve image quality. The other references pertain to **managing waste toner after an image is printed. This is not the same as managing the toner that is transferred and then fixed onto the print medium.** Toner left after a print job must be removed in an efficient manner. Toner applied to a print medium must result in good image quality and is not treated like waste toner. Therefore, the area of endeavors of Kunishi '557 and the other applied prior art references are too unrelated to be combined in the manner that the Examiner did in Paper No. 5. Because Kunishi '557 pertains to management of toner applied to the print medium and the other references primarily focus on toner that is not applied to the paper but is left on the rollers after a print job, Applicant submits that it is inappropriate for the Examiner to turn to Jeong '847, Nishiuwatoko '029, Hashimoto '548 and Kajiware '476 to fill in for the deficiencies of Kunishi '557. Therefore, the prior art rejections must be withdrawn.

**Discussion of the claim amendments as per 37 C.F.R. 1.111 (c)**

Applicant has amended the claims as follows. Applicant has amended claim 8 to clearly

indicate that it is the **magnitude** of the voltage applied to the charge roller that varies with the selected print mode. Claim 9 has been amended to clarify claim 9. Claim 13 is amended to claim that the DC magnitude and not the AC magnitude of the voltage of the charge roller that is changed. Claim 17 was amended to clarify the claim. Claim 18 was amended to again emphasize the magnitude of the voltage applied that varies. Claim 21 was amended to eliminate the “means for” language. Claim 21 was also amended to claim the input unit for inputting the print mode and the connections between the controller and the power supply and the input unit. Claims 22 and 24 were amended to clarify the claim language. Claim 23 was amended to emphasize that the DC magnitude of voltage applied to the charge roller varies with selected print mode. Claim 25 was amended to better claim the controller part. Claim 42 was added to emphasize the DC magnitude of the voltage varies on the charge roller with print mode selected. Claims 43 and 44 specify in detail how the DC magnitude of the voltage on the charge roller is varied. Claims 46 and 47 were added to again emphasize that it is the magnitude of the DC voltage applied to the charge roller that is varied. Claim 45 claims that the laser scanning unit outputs different power based on the print mode selected. Applicant submits that these amendments do not add new matter and that these amendments are not taught or suggested by the applied prior art. Entry of and favorable examination of these amendments is respectfully requested.

**Elimination of the Jeong ‘847 reference**

Applicant is hereby submitting a certified English translation of Korean Priority



Document 2001-3747 with this amendment to perfect foreign priority under 35 U.S.C. 119. This document was filed in the Korean Patent Office on January 26, 2001. Applicant submits that the English translation of KR 2001-3747 is identical to the specification filed in the U.S. Patent Office for on September 24, 2001 for the instant application 09/960,305. Applicant submits that the version of the drawings to KR 2001-3747 enclosed are versions of the drawings to KR 2001-3747 that were filed on February 10 and 13, 2001 in the Korean Patent Office. This February 10 and 13, 2001 version of the drawings are being submitted as an incorrect version of the drawings of KR 2001-3747 were accidentally filed in Korea on January 26, 2001. Applicant is perfecting foreign priority by the filing of this certified English translation to force the Examiner to use 35 U.S.C. 102 (e) instead of 35 U.S.C. 102 (a) thereby enabling Applicant to eliminate the Jeong '847 reference under 35 U.S.C. 103 (c). This is because with the filing of the instant certified English translation of KR 2001-3747, the Examiner can no longer say that Jeong '847 was patented before Applicant filed.

A fee of \$192 is incurred by the addition of one (1) more independent claims in excess of 6 and six (6) more claims in excess of 41. Applicant's check drawn to the order of Commissioner accompanies this Response. Should the check become lost, be deficient in payment, or should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

In view of the above, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Reconsideration of the rejections and objections is requested. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

Respectfully submitted,



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